

Process for Revising the Recovery Strategy

An essential component to any species recovery strategy is the provision of periodic review and, if necessary, revision of specific strategy elements. Given the long term nature of the strategy, flexibility and responsiveness are necessary. The strategy is based on the best available scientific and other information, but comprehensive and predictive knowledge is not available regarding ecological processes, synergistic effects of human activities, stochastic natural events, the most effective management practices, and the means of addressing stakeholder issues or conflicts. As the Department learns more about these topics, the strategy and coho salmon will benefit accordingly.

The Department has established an adaptive management approach (*sensu* Blann 2000) as part of this recovery strategy. The purpose of the adaptive management approach is to combine the scientific method and the experience of stakeholders and managers in an iterative process involving:

- Implementing the recommended strategy;
- Monitoring the species, habitat, and social/political response;
- Review of monitoring information; and
- Determining what, if any, changes are necessary to progress on a trajectory toward achieving the plan goals and objectives.

11.1 TIMETABLE AND PROCESS FOR REPORTING AND REVISION

Pursuant to Fish and Game Code section 2113, the Department will convene recovery teams, both the CRT and the SSRT, on an annual basis to discuss “the status and progress of implementation of the recovery strategy.” Information from these meetings would then be reported to the Commission. The Department, with the input of the recovery teams, will address any new information or changed conditions by developing recommendations to the Commission for modification of the strategy. Recommendations for recovery plan element modification would be formulated utilizing information from monitoring and research and feedback from participants indicating a change is necessary to remain on track toward meeting the goals and objectives of the recovery strategy. The Department will report annually to the

Commission regarding the status and progress of implementation of the recovery strategy, including any recommendations for modification of the strategy.

The initial years of implementation will involve securing funds and working with local, state, and federal entities to initiate high priority programs or projects called for in the range-wide and watershed recommendations of the recovery strategy. The assessment and monitoring elements will also be in their formative state. Annual meetings will be important during these early years to assess progress on strategy elements and decide on any necessary adjustments to the strategy for purposes of clarity and aiding implementation.

Over time, trends should be visible in habitat monitoring and project-level effectiveness monitoring. Information on coho salmon distribution and abundance may also give indications of response to management decisions based on the recovery strategy. Larger adjustments to the strategy for the purpose of improving efficacy or making progress toward goals and objectives may be warranted at this time.

Information from these annual progress reports will be used by the Department's review of the coho salmon status review pursuant to Fish and Game Code section 2077, which requires the Department to review listed species every five years to determine if conditions that led to the original listing are still present. Information regarding the population trend, range, distribution, abundance, the factors affecting the ability of the population to survive and reproduce, the degree and immediacy of the threat, and the impact of existing management efforts will be reviewed. The Department's reports to the Commission will include a review of the identification of the habitat that may be essential to the continued existence of the species and the department's recommendations for management activities and other recommendations for recovery of the species. If CESA recovery goals and delisting criteria are considered to have been met, the Department may include in five year coho status review report may contain a recommendation to remove the species from the list of endangered species or the list of threatened species for the Commission's consideration.

11.2 TIMETABLE CLARIFYING NON-SPECIFIC LONG-TERM GOALS

As information regarding the time and cost for successful implementation of recovery goals and objectives becomes available, the Department will be able to provide more details on specific long-term recovery goals. These long-term goals will be re-visited during the annual reviews. Long-term goals may be refined with: 1) new information on changed environmental conditions (e.g., significant floods or wildfires, fluctuation in ocean condition), 2) better knowledge on effects of human activities on coho

salmon populations and habitat, 3) better understanding of the biology of coho salmon, and/or 4) progress or increased effectiveness in recovery actions.

11.3 ADAPTIVE MANAGEMENT¹

The Department believes adaptive management is essential for successful planning and implementation of coho salmon recovery.

Adaptive management is a systematic process for continually improving Department management policies and practices concerning coho salmon recovery by learning from the outcomes of recovery strategy programs and activities.

This management approach will allow for: 1) application of recovery actions regarding the various issues and scales, both identified and future, 2) coordination and cooperation with other agencies, landowners, private industry, fishing organizations, and environmental organizations, 3) testing alternative recovery and conservation~land use practices, 4) ecosystem-based management for whole watersheds or portions of a watershed, 5) evaluation of coho salmon population health and habitat condition, and 6) incorporation of new information and better decision making based on research and monitoring of coho salmon recovery.

Essential to the progress of adaptive management will be input from local resource managers in government and industry, communities, and landowners who make decisions about land use and management, protecting and managing natural resources, and who will be responsible for implementing the majority of the recovery actions for coho salmon.

The recovery strategy's adaptive management process is a six-step cycle (Figure 11-1), the success of which depends on the completion of all six steps:

1. Assess Problem: There are several processes to this step. a) Identify the problems and issues facing coho salmon and habitat and evaluate the scientific, management, and economic options and feasibility of potential solutions. b) Acknowledge where there are uncertainties in policy or practice and that what is "best" for a particular management issue may vary by region and over time. c) Assess the current condition of factors affecting coho salmon recovery and where assessment is still necessary.
2. Design: Thoughtful selection of the policies, programs, and activities to be applied to recovery and additional assessment.
3. Implement: Implementation of identified programs and activities for recovery of coho salmon and continuing assessment designed to reveal the critical knowledge that is currently lacking,

¹ Adapted from Taylor et al. 1997.

4. Monitor: Examination of the key response indicators that inform the Department on the progress and effectiveness of recovery programs and activities and status and trend of coho salmon and habitat.
5. Evaluate: Analysis of the outcomes recovery activities and programs and assessment and monitoring information during evaluation of the progress of coho salmon recovery, reassessment of the original objectives, and consideration of revising the recovery strategy.
6. Adjust: Incorporation of the results the implementation and monitoring into future decisions and revisions of the recovery strategy.

FIGURE 11-1: Adaptive management cycle

